REMARKS

In view of the above amendment, applicant believes the pending application is in condition for allowance.

The attorney of record thanks Examiner Qi for holding a phone interview on December 1, 2005 to discuss this amendment. The Examiner understood the distinctions between the amended claims and the cited prior art. Namely, the simultaneous introduction of oxygen during the formation of the alignment layer. However, the Examiner indicated he would need time to consider the amendment and update his search so that no agreement was reached. The following comments summarize the arguments proposed during the interview.

The Office Action and prior art relied upon have been carefully considered. In an effort to expedite the prosecution independent claim 2 has been amended to clarify the point of novelty of the invention.

Claims 2 and 3 have been rejected under 35 U.S.C. 103(a) as unpatentable over Lu in view of Shimada. Prior to a comparison of the references to the present claims, a short review of the point of novelty for the present invention is offered.

A patentable feature of the present invention as compared to the prior art is the introduction of oxygen into the filming apparatus 100 simultaneous with forming the inorganic alignment layers 12 and 14 on the base 11 or 15 of the LCD element 10 by evaporating the inorganic material 111 (see page 17, paragraphs [0038] and [0039]).

Further, pressure of the oxygen gas is adjusted so as to orient the pre-tilt angle of the liquid crystal to between 3-10 degrees (see page 15, paragraph [0034]). Accordingly, by introducing oxygen gas into a filming apparatus simultaneous with evaporating an

inorganic material for an alignment layer on a base of an LCD, an inorganic alignment layer is formed which orients a pre-tilt angle of liquid crystal to the stated range of 3-10 degrees.

Lu (US 6,426,786 B1) fails to disclose the step of introducing oxygen gas into the filming apparatus at a prescribed gas pressure as the Examiner acknowledges. However, the Examiner argues that Shimada (US 5,030,322) discloses the step of introducing oxygen gas at the prescribed gas pressure. However, the combination of references falls short as will now be explained.

Shimada discusses three prior art methods. The first is a rubbing method. The second is an oblique evaporation method for forming a film consisting of liquid-crystal molecules oriented in a horizontal and unidirectional manner (column 1, lines 28-31). The third is a method of forming a film consisting of silicon oxide on an electrode plate and radiating grain like ions (column 1, lines 46-52).

Shimada discusses problems in relation to the respective prior art film forming methods (column 1, line 56 to column 2, line 23). The purpose of Shimada is to present a method of forming an orientation film of an LCD device, which solves these problems.

According to the description in the second embodiment of Shimada pointed out by the Examiner, a polyimide film orientation film is formed (column 5, lines 57-63). However, note that in column 5, line 6 it is clear that the environment is "a vacuum atmosphere." Then, the resulting film surface is etched by irradiating accelerated argon ions after introducing an argon gas (column 5, line 64 to column 6, line 19).

In the case of the first embodiment of Shimada, accelerated grains are obliquely radiated on a polyimide film after forming the polyimide film in the same manner as the

second embodiment (column 3, lines 25-59). Attention must be paid to the fact that during orientation film formation, the environment is essentially a vacuum since vacuum evaporation can be used (column 3, line 29) and in line in col. 3, line 60 it is clearly stated that "a vacuum pump 14 serves to vacuumize the bell jar 6."

Sole dependent claim 2 further differentiates the invention from the cited art.

In summary, an important distinction between Shimada and the claims as amended is that gas is not introduced when forming an orientation film or an alignment layer as is required in the presently claimed invention. On the contrary, in the case of the present invention, oxygen gas is introduced at a prescribed pressure into a filming apparatus simultaneous with evaporating an inorganic material to form an inorganic alignment layer on a base of an LCD element so as to orient a pre-tilt angle of the liquid crystal toward the angle of 3 to 10 degrees.

For the reasons set forth above, the combination of Lu and Shimada fails to render the claims unpatentable under 35 U.S.C. 103(a), principally because the references taken solely or in any reasonable combination are silent on the step of introducing oxygen at a prescribed pressure during formation of the alignment layer.

In view of the above, consideration and allowance are, therefore, respectfully solicited.

In the event the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

The Director is hereby authorized to charge any fees, or credit any overpayment, associated with this communication, including any extension fees, to CBLH Deposit Account No. 22-0185, under Order No. 21994-00064-US from which the undersigned is authorized to draw.

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Respectfully submitted,

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